

In the Claims:

1. (Currently Amended) A computerized method for determining a complex computer operation for a computer application, comprising the steps of:
generating a data flow graph representing the computer application;
generating a plurality of sub-graphs of said data flow graph, wherein each of said sub-graphs represents a basic block of said computer application;
(a) traversing generating a tree of potential complex computer operations, wherein each of said potential complex computer operations represents one or more of said sub-graphs; and
~~(b) pruning the tree for optimality under constraints.~~
2. (Original) The method of claim 1, wherein optimality comprises maximization of a function of merit.
3. (Original) The method of claim 1, wherein the constraints comprise a convexity constraint.
4. (Original) The method of claim 1, wherein the constraints comprise a maximum-input-multiplicity constraint
5. (Original) The method of claim 1, wherein the constraints comprise a maximum-output-multiplicity constraint.
6. (Original) The method of claim 1, wherein pruning is effected when a connectivity constraint is violated.
7. (Original) The method of claim 1, wherein pruning is effected when a connectivity constraint is violated and gain towards optimality of the maximal connected graph is bounded.

8. (Currently Amended) A system for determining a complex computer operation for a computer application, comprising:

computer means for generating a data flow graph representing the computer application;
computer means for generating a plurality of sub-graphs of said data flow graph, wherein each of said sub-graphs represents a basic block of said computer application;

(a) ~~system~~ computer means for traversing a tree of potential complex computer operations; and

(b) ~~system~~ computer means for pruning the tree for optimality under constraints.

9. (Currently Amended) The system of claim 8, wherein the computer means for pruning comprises ~~system~~ means for maximization of a function of merit of a cut of the tree.

10. (Currently Amended) The system of claim 8, wherein the computer means for pruning comprises ~~system~~ means for enforcing a convexity constraint.

11. (Currently Amended) The system of claim 8, wherein the computer means for pruning comprises ~~system~~ means for enforcing a maximum-input-multiplicity constraint.

12. (Currently Amended) The system of claim 8, wherein the computer means for pruning comprises ~~system~~ means for enforcing a maximum-output-multiplicity constraint.

13. (Currently Amended) The system of claim 8, wherein the computer means for pruning comprises ~~system~~ computer means for pruning when a connectivity constraint is violated.

14. (Currently Amended) The system of claim 8, wherein the computer means for pruning comprises ~~system~~ computer means for pruning when a connectivity constraint is violated and gain towards optimality of the maximal connected graph is bounded.